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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,488	05/29/2001	Charles C. Peck	YOR920000699US1	3498
7590	02/03/2005			
McGuire Woods, LLP 1750 Tysons Boulevard, Suite 1800 Tysons Corner McLean, VA 22102-3915			EXAMINER LU, TOM Y	
			ART UNIT 2621	PAPER NUMBER
DATE MAILED: 02/03/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,488

Applicant(s)

PECK, CHARLES C.

Examiner

Tom Y Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 4-6, 10-13 and 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-9, 14-16 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The written response filed on October 1, 2004 has been considered.
2. Claim 21 is added.
3. Claims 4-6, 10-13 and 17-20 have been restricted and withdrawn from consideration.
4. Claims 1-21 are pending.

Response to Arguments

5. Applicant's arguments filed on October 1, 2004 have been fully considered but they are not persuasive.

The Luo reference:

Applicant argues "the subtraction of the first frame from the second frame recited in claim 1 subtracts out the full value of the ambient IR illumination, which different than Luo's compensated value of combined illuminated and ambient illumination". In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "the subtraction of the first frame from the second frame recited in claim 1 subtracts out the full value of the ambient IR illumination") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In addition, the independent claims call for "substantially devoid of said ambient light noise portion", first of all, the degree of substantiality has not been disclosed, and it appears to be quite different from applicant's assertion of "full value of the ambient IR illumination", which the examiner understands as a

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complete devoid of said ambient light noise portion. In any event, such feature was never claimed. Additionally, Luo does mathematically disclose subtracting said first image from said second image to produce an output image *substantially* devoid of said ambient light noise

portion; the equation of $S2 - \left[\frac{S2 + S1}{2} \right]$ is equivalent to $\frac{S2 - S1}{2}$ (note the equations in

applicant's response on page 9 are incorrect), and the numerator of the equation, $S2 - S1$, shows

subtracting said first image from said second image to produce an output image of $\frac{S2 - S1}{2}$.

Note this equation also explains claims 3 and 16.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 7-9, 14-16 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Luo (U.S. Patent No. 6,134,339).

- a. Referring to Claim 1, Luo discloses an illuminator for illuminating a user's eye with light radiation (illumination source 12, column 7, lines 1-2); a camera (video camera 14, column 6, line 59) for detecting an illuminator signal from said illuminator light radiation reflected from the user's eye and also detecting ambient light noise (ambient illumination, column 7, line 29), said camera outputting an

output signal (frames S21 and frames 22); means for synchronizing said illuminator to turn on with a first interval of said camera and turn off with a second interval of said camera (triggering circuit, column 7, line 3); means for digitizing said output signal and capturing a first image from said first interval having an illuminator signal portion (frame S22 with ambient illumination and additional illumination source 12, column 7, lines 30-32) and an ambient light noise portion and capturing a second image from said second interval having said ambient light noise portion (frame S21 with ambient illumination only, column 7, lines 28-29); and means for subtracting said first image from said second image to produce an output image substantially devoid of said ambient light noise portion (column 7, lines 35-39. the compensated image is $(S21+S22)/2$, the difference image is $S22-(S21+S22)/2$ or $S21-(S21+S22)/2$).

- b. Referring to Claim 2, Luo discloses wherein said first and second intervals comprises camera frames (S21 and S22 are video frames).
- c. Referring to Claim 3, Luo discloses wherein said means for subtracting subtracts according to the expression $o_n = |f_n - f_{n-1}|$, where n is an integer ≥ 0 , o is said output image, and f are said camera frames (S21 and S22 correspond to f_n and f_{n-1} respectively, and the difference image could be $S22-(S21+S22)/2 \rightarrow (S22-S21)/2$ or $S21-(S21+S22)/2 \rightarrow (S21-S22)/2$, whichever satisfies the expression of $f_n - f_{n-1}$).
- d. With regard to Claim 7, see explanation in Claim 1.
- e. With regard to Claim 8, see explanation in Claim 2.
- f. With regard to Claim 9, see explanation in Claim 3.

- g. With regard to Claim 14, the only difference between Claim 1 and Claim 14 is Claim 14 calls for additional limitation of “a computer readable medium”, which Luo at column 6, line 67, teaches feature steps on computer 30, which inherently contains a computer readable medium.
- h. With regard to Claim 15, see explanation in Claim 2.
- i. With regard to Claim 16, see explanation in Claim 3.
- j. Referring to Claim 21, Luo discloses wherein means for subtracting said first image from said second image subtracts said first image from said second image pixel-by-pixel (in Luo’s system, the subtraction is done pixel-by-pixel. Note $S2 - \left[\frac{S2 + S1}{2} \right]$ can be broadly interpreted as subtracting S1 from said S2 since image $\left[\frac{S2 + S1}{2} \right]$ incorporates S1).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu



ASSISTANT
PATENT EXAMINER